

and usefulness greatly increased if its price were more within the reach of modest means. Doubtless such a book is very expensive to produce, but surely this is a case where the wealthy treasury of a great nation might have balanced a possible pecuniary loss against a certain imperial gain.

E. A. M.

A NEW TEXT-BOOK OF PALÆOZOLOGY.
Lehrbuch der Palæozoologie. By Prof. E. Stromer von Reichenbach. I., Wirbellose Tiere. Pp. x + 342. Naturwissenschaft und Technik in Lehre und Forschung. (Leipzig : B. G. Teubner, 1909.) Price 10 marks.

IN several features the present volume may well claim to be in advance of many of the text-books on the subject which have appeared during latter years. Instead of being a mere systematically arranged and uninteresting descriptive catalogue, it provides splendid material for the student who desires an intelligent understanding of the subject.

In a well-written introduction the author discusses the scope of the science, the history of its origin, the present state of our knowledge of the science, conditions of fossil-preservation, the relationship of palæozoology to other sciences, and, lastly, the constitution of the skeleton in different animals. For the most part the work is limited, except in some of the more thoroughly investigated groups, to the treatment of orders and higher divisions. Greater detail would have defeated the end in view—that of providing a clearly written exposition for beginners who are assumed to have only elementary knowledge of zoology and no acquaintance with geology. The lower animals receive much attention, and their discussion occupies a considerable portion of the volume. An attempt has been made to embody the recent researches in the different sections without unduly obscuring the clearness. Thus, for instance, in the section on the rugose corals is given the explanation of the septal plan as recently set forth by Carruthers.

Other important features are the paragraphs on the geological distribution and the evolution of each group, as well as the concise summary of the diagnostic characters of the several groups at the close of the treatment of each phylum. A general discussion of the contributions of palæozoology to the study of phylogeny is reserved for the second volume. A valuable list of the chief works at the end of each section provides the necessary guide to those students who might wish to continue the subject further.

The use of a special mark to signify extinct forms is unfortunate, since the necessary frequency of these signs in some parts proves to be a distracting eyesore. Moreover, Frech has used the same mark in his "Lethæa Palæozoica" to denote the last appearance of a form in the stratigraphical sequence.

Undoubtedly, one of the outstanding features of the book is the excellence of the illustrations and the introduction of so many that are new in a text-book. The clearness of the figures and the conciseness of the explanatory notes leave nothing to be desired. The inclusion of technical terms such as "latisellat,"

"kryptodont," and "iterative Formenbildung," in the index must prove very useful.

On the whole, the author can be congratulated upon producing a very good and serviceable text-book, for he has succeeded very well in preserving the educationist's ideal of a treatment proceeding "from the known to the unknown," and not, as is often the case, "to the unknown through the more unknown."

IVOR THOMAS.

CHEMISTRY IN COURT.

A Manual of Forensic Chemistry, dealing especially with Chemical Evidence: its Preparation and Adduction. Based upon a Course of Lectures delivered at University College. By William Jago. Pp. viii + 256. (London : Stevens and Haynes, 1909.) Price 5s. net.

IN one way or another, chemical matters form no insignificant proportion of the cases dealt with by our police courts and civil tribunals. Poisoning tragedies, infringement of patents, adulteration of food, and even libel actions—these are some, but by no means all, of the causes which serve to bring chemist and lawyer professionally together; and, not infrequently, chemist and lawyer find themselves at loggerheads.

There are legal subtleties which the chemist is apt to overlook. For example, a well-known scientific witness once set out to explain what a certain claim in a specification meant. "Kekewich, J.," interposed with the remark, "That is for me, Sir James." So the witness had to cast about for a more acceptable form of words. "Speaking as a chemist," he said, "the following words in the claim mean to me" so and so. With this preliminary the evidence was admissible, and the witness was allowed to proceed.

On the other hand, there are chemical distinctions which to the lawyer are often a mystery of mysteries. Our author recognises this, and seeks, as far as may be, to make the rough places plain for the members of both professions.

For the lawyer, he explains shortly the objects and principles of chemistry. He gives examples of "direct" and "indirect" methods of analysis, and directs attention to such points as the collection of fair samples, the changes which in perishable articles may affect the analysis, the occurrence of "traces" of a constituent, and the control of results by "blank" experiments. For the chemist, there is very good advice on such matters as the preparation of the "proof," the form of the certificate, and the use of books in the witness-box. For both, there is a collection of illustrative cases, bringing out the chief points and rulings which affect present-day practice. Many of the *causes célèbres* of the last fifty years are quoted. Thus the Palmer and the Maybrick poisoning prosecutions, the cordite litigation, the "what is whiskey?" proceedings, the libel action in connection with altar candles, and the disputed validity of the Badische Anilin Company's patents, are some of the many cases which are made to point a moral for the reader's benefit.

Possibly a little more chemistry would have been welcome to the lawyer. Perhaps, also, the chemist would like to see a fuller discussion of the principles of evidence after the manner adopted on p. 245, where not only the practice but the reasons for it are adduced. Precedents, however, bulk largely in legal work; and if the chemist, from his training and mental leanings, would rather have had more principle and less precedent, it does not follow that he would have found it of more actual utility. Nevertheless, the author might note these suggestions in view of a second edition. In any case, the book can be recommended as a helpful and interesting one to those for whom it is written. C. SIMMONDS.

THE MORPHIA HABIT.

The Morphia Habit and its Voluntary Renunciation. A Personal Relation of a Suppression after Twenty-five Years' Addiction. By Dr. Oscar Jennings. Pp. x+492. (London: Baillière, Tindall and Cox, 1909.) Price 7s. 6d. net.

IT were well, if time permitted, that each physician should experience in his own person (meaning thereby his whole person, psyche and soma) a few typical examples of the complaints which he will have to treat. He would thus acquire an insight into disease obtainable in no other way, and with Aeneas might exclaim:—

"Quæque ipse miserrima vidi,
Et quorum pars magna fui."

This apt quotation is found on the title-page of Dr. Jennings's book, and its aptness lies precisely in this, that the book includes, in the shape of a diary, the record, from within, of the overcoming of an addiction to morphia of twenty-five years' standing. Of habit, pernicious, no more typical example could have been selected than the morphia habit, and this treatise presents us with a valuable contribution to the study and solution of a very serious problem.

Dr. Jennings approaches the problem by two paths, the psychologic and the somatic, in this order. His primary demand is that the patient shall bring, on his part, the desire, the intention, the will (what remains of it), to get well; that before all else the psyche point in the right direction. His next demand is that the physician shall, on his part, supply encouragement, and shall instil into the patient, first a full confidence in himself as guide, and then a spirit of self-reliance; or the order may be reversed, it does not matter so long as hope, trust, and self-reliance find an entry. He urges, and it must be clear, that the best of all cures can only be upon these lines, and that cures which have been effected without the patient's willing cooperation, *a fortiori*, against his will, must be inferior in value. To seek a simile, the willing and the unwilling cure may be likened to the cure of an infectious disease, brought about, on the one hand, by the successful resistance of the patient's own tissues, on the other, by the aid of antidotal powers (anti-toxins) which the efforts of alien tissues have supplied. We have reason to believe that the immunity acquired by the former is the more complete and the more lasting.

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Dr. Jennings, however, is not content with teaching a reasonable doctrine; he shows further, by his record of successful cases, the feasibility of the plan which he advocates. With much practical wisdom, he will not allow us to forget that the problem has a somatic side; he is too good a physiologist not to see that to deny this is to deny physiology, "the solid ground of nature"; also that to recognise a somatic side, yet to deny the possibility of material access to the body, as by the medicaments, is to deny physiology once again, since pharmacology is but a department of physiology. On this subject, the value of drugs in the treatment of the morphia habit, the author has much of interest to tell; in particular he insists upon "his therapeutic triad," the use, namely, of heart tonics—of alkalies, especially Vichy water—and of hydropathic measures, notably the Turkish bath. His views do not always fit in with pharmacological teaching, e.g. in the value which he assigns to sparteine, but here the last word must rest with the clinician.

Dr. Jennings's dietetic handling of his subject strikes the reviewer as interesting and original, and as mindful of the dietetic wisdom of the Hippocratic aphorisms.

By means dietetic and medicinal, as set forth by the author, the stress of the bodily cravings is eased and the enfeebled will enabled to maintain its operation; maintaining its operation, volition, according to the law of growth, is gradually built up, the habit of right operation becoming ingrained. Thus in the re-education of the will, the great force of custom is called upon to help to overthrow that dominance which the great force of custom had established—"Certa viriliter"; said S. Thomas à Kempis, "con-suetudo consuetudine vincitur." The victim of habit may take these words to heart, and in this record of Dr. Jennings find further encouragement to persevere, and along what lines to seek and find health.

SCHOOL GARDENS.

Practical School Gardening. By P. Elford and Samuel Heaton. Pp. 224. (Oxford: Clarendon Press, 1909.) Price 2s. net.

FEW educational movements of recent years have produced a more copious crop of text-books, hand-books, readers, and so on, than what is called nature-study. This result is not quite in harmony with the spirit of the movement, which is to avoid the book and study the thing. The child is to use his own eyes, to observe the thing itself in its proper habitat, and in relation to its ordinary surroundings; from these observations he is to make deductions, and thus he is to be trained to think. Of course, the scheme has to be modified to suit the exigencies of the time-table, but it has been shown to work and to give country children a living interest in their surroundings, besides providing the teacher with a powerful engine for education. The final success of the method depends, however, on how far the teacher himself possesses the proper habit of mind, and how far he has overcome the dependence on text-books